What is claimed is:

1. In a data storage environment having a first volume of data denominated as the source being stored on a data storage system, and a second volume of data denominated as the clone and which has data content that is a copy of the data content of the source being stored on the data storage system or on another data storage system, a method of processing a host computer's request to write data to the source during a restoration of the source, the method comprising the steps of:

restoring the source by copying data content from the clone to overwrite the data content of the source;

queing in memory any host computer requests to write or read data for the source that involve data that is being restored from the clone to the source during the queing process; and

copying any data needed to service the host computer requests to write or read data for the source, which step is denominated as a copy on demand step.

2. The method of claim 1, and further comprising the step of preserving the data content of the clone by not allowing it to be overwritten by host writes during the restoring step.

3. The method of claim 1, wherein a map denominated as a copy on demand map is used to track extents being copied during the restoring step and the copy on demand map is used to coordinate the restoring and the copy on demand steps to avoid data corruption.

4. The method of claim 2, wherein a map denominated as a copy on demand map is used to track extents being copied during the restoring step and the copy on demand map is used to coordinate the restoring and the copy on demand steps to avoid data corruption.

5. The method of claim 2, wherein a map denominated as a protected restore map is used to track those extents that are modified due to host write requests during the steps of claim 1 and 2.

6. The method of claim 4, wherein a map denominated as a protected restore map is used to track those extents that are modified due to host write requests during the steps of claim 1 and 2.

7. The method of claim 6, wherein the protected restore map and the copy on demand map are used to coordinate copying of data from the clone to the source

8. The method of claim 3, wherein a map denominated as a protected restore map is used to track those extents that are modified due to host write requests during the steps of claim 1 and 2.

9. The method of claim 8, wherein the protected restore map and the copy on demand map are used to coordinate copying of data from the clone to the source.

10. The method of claim 5, wherein a map denominated as a clone delta map is used to track extents of the clone that may be different from the clone and the source.

11. The method of claim 10, wherein the clone delta map is used to copy only extents that are different between the clone and its source during the restoring step.

12. The method of claim 11, wherein the protected restore map is coordinated with the clone delta map for efficient processing of requests to write data to the source.

13. The method of claim 7, wherein a map denominated as a clone delta map is used to track extents of the clone that may be different from the clone and the source.

14. The method of claim 13, wherein the clone delta map is used to copy only extents that are different between the clone and its source during the restoring step.

15. The method of claim 14, wherein the protected restore map is coordinated with the clone delta map for efficient processing of requests to write data to the source.

16. The method of claim 9, wherein a map denominated as a clone delta map is used to track extents of the clone that may be different from the clone and the source.

17. The method of claim 16, wherein the clone delta map is used to copy only extents that are different between the clone and its source during the restoring step.

18. The method of claim 17, wherein the protected restore map is coordinated with the clone delta map for efficient processing of requests to write data to the source.

19. The method of claim 18, wherein the clone delta map is persisted.

20. The method of claim 19, wherein the protect restore map is persisted.

21. The method of claim 1, wherein the source and the clone are each represented by respective first and second logical units.

22. The method of claim 21, wherein the source and the clone are each represented by respective first and second logical units.

23. A system for processing a host computer's request to write data to the source during a restoration of the source, the system comprising:

a data storage system having a first volume of data denominated as the source being stored on a data storage system, and a second volume of data denominated as the clone and which has data content that is a copy of the data content of the source being stored on the data storage system or on another data storage system; and

computer-executable program logic configured for causing the following computer-executed steps to occur:

restoring the source by copying data content from the clone to overwrite the data content of the source;

queing in memory any host computer requests to write or read data for the source that involve data that is being restored from the clone to the source during the queing process; and

copying any data needed to service the host computer requests to write or read data for the source, which step is denominated as a copy on demand step.

24. The system of claim 23, and further comprising the computer-executed step of preserving the data content of the clone by not allowing it to be overwritten by host writes during the restoring step.

25. The system of claim 23, wherein a map denominated as a copy on demand map is used to track extents being copied during the restoring step and the copy on demand map is used to coordinate the restoring and the copy on demand steps to avoid data corruption.

26. The system of claim 24, wherein a map denominated as a copy on demand map is used to track extents being copied during the restoring step and the copy on demand map is used to coordinate the restoring and the copy on demand steps to avoid data corruption.

27. The system of claim 24, wherein a map denominated as a protected restore map is used to track those extents that are modified due to host write requests during the steps of claim 1 and 2.

28. The system of claim 26, wherein a map denominated as a protected restore map is used to track those extents that are modified due to host write requests during the steps of claim 1 and 2.

29. The system of claim 28, wherein the protected restore map and the copy on demand map are used to coordinate copying of data from the clone to the source

30. The system of claim 25, wherein a map denominated as a protected restore map is used to track those extents that are modified due to host write requests during the steps of claim 1 and 2.

31. The system of claim 30, wherein the protected restore map and the copy on demand map are used to coordinate copying of data from the clone to the source.

32. The system of claim 27, wherein a map denominated as a clone delta map is used to track extents of the clone that may be different from the clone and the source.

33. The system of claim 32, wherein the clone delta map is used to copy only extents that are different between the clone and its source during the restoring step.

34. The system of claim 33, wherein the protected restore map is coordinated with the clone delta map for efficient processing of requests to write data to the source.

35. The system of claim 29, wherein a map denominated as a clone delta map is used to track extents of the clone that may be different from the clone and the source.

36. The system of claim 35, wherein the clone delta map is used to copy only extents that are different between the clone and its source during the restoring step.

37. The system of claim 36, wherein the protected restore map is coordinated with the clone delta map for efficient processing of requests to write data to the source.

38. The system of claim 31, wherein a map denominated as a clone delta map is used to track extents of the clone that may be different from the clone and the source.

39. The system of claim 38, wherein the clone delta map is used to copy only extents that are different between the clone and its source during the restoring step.

40. The system of claim 39, wherein the protected restore map is coordinated with the clone delta map for efficient processing of requests to write data to the source.

41. The system of claim 40, wherein the clone delta map is persisted.

42. The system of claim 41, wherein the protect restore map is persisted.

43. The system of claim 1, wherein the source and the clone are each represented by respective first and second logical units.

44. The system of claim 43, wherein the source and the clone are each represented by respective first and second logical units.

45. A program product for use in a data storage environment and being related to processing a host computer's request to write data to the source during a restoration of the source, wherein the data storage environment includes:

a data storage system having a first volume of data denominated as the source being stored on a data storage system, and a second volume of data denominated as the clone and which has data content that is a copy of the data content of the source being stored on the data storage system or on another data storage system; and

the program product includes computer-executable logic contained on a computer-readable medium and which is configured for causing the following computer-executed steps to occur:

restoring the source by copying data content from the clone to overwrite the data content of the source;

queing in memory any host computer requests to write or read data for the source that involve data that is being restored from the clone to the source during the queing process; and

copying any data needed to service the host computer requests to write or read data for the source, which step is denominated as a copy on demand step.

46. The program product of claim 45, and further comprising computer-executable logic contained on the computer-readable medium and which is configured for causing the following computer-executed step to occur:

preserving the data content of the clone by not allowing it to be overwritten by host writes during the restoring step.